AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings include changes to Figure 3. Item 110 has been renumbered as item 300 and matches the specification. Item 388 has been corrected to 338 to match the specification. Item 325 has been corrected to 326 to match the specification. Items 306, 308, and 310 have been changed to 306A, 308A, and 310A, respectively. Items 316 have been renumbered to 306B, 308B, and 310B and correspond with 306A, 308A, and 310A, respectively. The combination of 306A and 306B has been called out as 306. The combination of 308A and 308B has been called out as 308. The combination of 310A and 310B has been called out as 310. Item numbers 280, 282, 200, 298, 388, 382, 330, 384, 386, and 318 have been removed from Figure 3.

Attachment: Replacement sheet
Annotated sheet showing changes

REMARKS

This is intended as a full and complete response to the Office Action dated March 25, 2008, having a shortened statutory period for response set to expire on June 25, 2008. Please reconsider the claims pending in the application for reasons discussed below.

In the specification, the paragraphs [0009], [0026], [0028], [0029], [0032], [0034], [0035], [0037], [0038], [0039], [0043], [0044], [0050], and [0052] have been amended to correct minor editorial problems.

In amended Figure 3, item numbers have been changed to match the specification and item numbers not appearing in the specification have been deleted. All of the Examiner's objections to the drawings have been corrected.

Claims 1-21 remain pending in the application and are shown above. Claims 2 and 19 have been cancelled by Applicant. Claims 1-21 are rejected by the Examiner. Claim 1 has been amended to incorporate all of the elements and limitations of original claim 2. Claims 3, 4, and 9 have been amended to correct matters of form. Claim 18 has been amended to incorporate all of the elements and limitations of original claim 19. Claim 20 has been amended to depend from claim 18. Reconsideration of the rejected claims is requested for reasons presented below.

Claim Rejections – 35 U.S.C. § 103

Claims 1-4 and 8-9 are rejected under 35 U.S.C. § 103(a) as being unpatenable over *Dordi et al.* (U.S. Publ. No. 2001/0052465) in view of *Mayer et al.* (U.S. Patent No. 6,527,920) and *Johnson et al.* (U.S. Publ. No. 2002/0179544). Applicant has amended claim 1 to incorporate all of the elements and limitations of original claim 2 and has canceled claim 2. Applicant respectfully traverses the rejection.

Regarding original claims 1, 2, and 9, the Examiner asserts that *Dordi et al.* and *Mayer et al.* teach or suggest all of the elements and limitations of original claim 1 except a

solution mixing system fluidly communicating with a fluid distribution manifold. The Examiner further asserts that *Johnson et al.* teach a fluid delivery system with a fluid metering pump and a controller. The Examiner asserts these combined teachings include all of the elements and limitations of original claims 1 and 2, now amended claim 1. Applicant respectfully submits that the Examiner errs in this assertion.

Dordi et al. teach an electrolyte solution replenishing system for providing electrolyte processing fluid to electroplating process cells. The system includes source tanks that contain chemicals needed for composing the electrolyte solution. The source tanks are connected to a main supply line to feed the chemicals into a main electrolyte solution tank. The main electrolyte solution tank feeds into a valve that controls the flow into the process cells. *Dordi et al.* do not teach a solution mixing system communicating with a fluid distribution manifold or catholyte and anolyte supply conduits in fluid communication with the manifold.

Mayer et al. teach an electroplating system with a process cell having an anolyte compartment and a catholyte compartment. An anolyte tank feeds the anolyte compartment, and a catholyte tank feeds the catholyte compartment. *Mayer et al.* do not teach a solution mixing system communicating with a fluid distribution manifold or anolyte and catholyte supply conduits in fluid communication with the manifold.

Johnson et al. teach a cell washing and fluid supply system that may be used to provide fluid from multiple source lines to multiple destinations. The fluid supply system includes a single line (36), at a source end (56) of the tubing set (54) that may be adapted for multiple source containers through the use of an adapter set (60). The solution from the source containers is mixed in the spiked coupler (48). The solution is then divided into two tubes twice, resulting in four tubes of the solution entering the pump frame (30). The pump frame pumps the previously mixed solution from four inputs directly into four outputs without further mixing of the solution. Four manual clamps (52) are provided to control the output to four spikes (48) at the destination end (58) of the tubing set (54). Paragraphs [0110] – [0112]; Figure 19A. *Johnson et al.* do not teach a solution mixing system

comprising a fluid metering pump having a plurality of fluid inputs and at least one fluid output in fluid communication with a manifold or a controller in communication with the fluid metering pump, the controller being configured to operate the metering pump such that the base solution and fluid from the plurality of additive containers is mixed in a predetermined ratio and dispensed from one of the at least one outputs.

Therefore, *Dordi et al.*, *Mayer et al.*, and *Johnson et al.*, alone or in combination, do not teach, show, or suggest a fluid delivery system for a multiple chemistry electrochemical plating platform, comprising a solution mixing system fluidly communicating with a fluid distribution manifold, wherein the solution mixing system comprises a fluid metering pump having a plurality of fluid inputs and at least one fluid output in fluid communication with the manifold, a base solution container in fluid communication with one of the plurality of inputs, a plurality of additive containers, each of the plurality of additive containers being in fluid communication with at least one of the inputs, and a controller in communication with the fluid metering pump, the controller being configured to operate the metering pump such that the base solution and fluid from the plurality of additive containers is mixed in a predetermined ratio and dispensed from one of the at least one output, a catholyte supply conduit in fluid communication with the manifold and selectively in fluid communication with a plurality of catholyte fluid solution tanks, an anolyte supply conduit in fluid communication with the manifold and selectively in fluid communication with a plurality of catholyte fluid solution tanks, an anolyte supply conduit in fluid communication with the manifold and selectively in fluid communication with a plurality of anolyte fluid solution tanks, and a selectively actuated valve positioned adjacent each of the anolyte and catholyte tanks in the supply conduits as recited in amended claim 1 and claims 3-8 dependent thereon. Applicant respectfully requests withdrawal of the rejection.

Additionally, *Dordi et al.*, *Mayer et al.*, and *Johnson et al.*, alone or in combination, do not teach, show, or suggest a plating solution mixing and delivery system for an electrochemical plating platform comprising a fluid mixing apparatus comprising a fluid metering pump having a plurality of inputs and at least one output, a base solution

container in fluid communication with one of the plurality of inputs, a plurality of additive containers, each of the plurality of additive containers being in fluid communication with at least one of the inputs, and a controller in communication with the fluid metering pump, the controller being configured to operate the metering pump such that the base solution and fluid from the plurality of additive containers is mixed in predetermined ratios and dispensed from one of the at least one outputs, a fluid dispensing manifold in fluid communication with the at least one output, an anolyte conduit in fluid communication with the manifold, the anolyte conduit fluidly communicating with an anolyte storage tank, a catholyte conduit in fluid communication with the manifold, the catholyte conduit fluidly communicating with a catholyte storage tank, and an electrochemical plating cell having an anolyte compartment and a catholyte compartment, the anolyte compartment being in fluid communication with the anolyte storage tank and the catholyte compartment being in fluid communication with the catholyte storage tank as recited in claim 9 and claims 10-17 dependent thereon. Applicant respectfully requests withdrawal of the rejection.

Claims 5-7 and 10-17 are rejected under 35 U.S.C. § 103(a) as being unpatenable over *Dordi et al.* (U.S. Publ. No. 2001/0052465) in view of *Mayer et al.* (U.S. Patent No. 6,527,920) and *Johnson et al.* (U.S. Publ. No. 2002/0179544), as applied to claims 1, 4 and 9 above, and further in view of *Mayer et al.* (U.S. Publ. No. 2002/0074238, hereinafter *Mayer '238*). Applicant respectfully traverses the rejection.

The deficiencies of *Dordi et al.*, *Mayer et al.*, and *Johnson et al.*, are discussed above with respect to amended base claim 1 and base claim 9. *Mayer '238* teach that problems were known in the art of electrochemical processing of semiconductor wafers with regard to bubble formation in electrolyte solutions. *Mayer '238* incorporated by reference in its entirety U.S. Application No. 09/872,340, which teaches introducing an electrolyte into a holding tank having a vertical baffle. The electrolyte is introduced by way of an Archimedes screw. *Mayer '238* does not teach a solution mixing system communicating with a fluid distribution manifold or anolyte and catholyte supply conduits in fluid communication with the manifold. Therefore, *Mayer '238* does not remedy the

deficiencies of *Dordi et al.*, *Mayer et al.*, and *Johnson et al.* with respect to amended base claim 1 from which claims 5-7 depend or base claim 9 from which claims 10-17 depend. Applicant respectfully requests withdrawal of the rejections.

Additionally, *Dordi et al.*, *Mayer et al.*, *Johnson et al.*, and *Mayer '238* alone or in combination, do not teach, show, or suggest the fluid delivery system of claim 5, wherein the baffle system comprises at least two compartments, the at least two compartments being separated by at least one wall, a fluid feed through positioned in a lower portion of the wall, and at least one angled wall positioned in a fluid flow path within each of the at least two compartments as recited in claim 6. Applicant respectfully requests withdrawal of the rejection.

Dordi et al., *Mayer et al.*, *Johnson et al.*, and *Mayer '238,* alone or in combination, do not teach, show, or suggest the fluid delivery system of claim 5, further comprising an angled fluid receiving wall positioned to receive fluid supplied to the individual fluid tanks as recited in claim 7. Applicant requests withdrawal of the rejection.

Dordi et al., *Mayer et al.*, *Johnson et al.*, and *Mayer '238*, alone or in combination, do not teach, show, or suggest the system of claim 13, wherein each of the isolated compartments includes an angled fluid engaging wall positioned in a fluid path therein as recited in claim 14. Applicant requests withdrawal of the rejection.

Claims 18-21 are rejected under 35 U.S.C. § 103(a) as being unpatenable over *Dordi et al.* (U.S. Publ. No. 2001/0052465) in view of *Mayer et al.* (U.S. Patent No. 6,527,920) and *Johnson et al.* (U.S. Publ. No. 2002/0179544) and *Mayer et al.* (U.S. Publ. No. 2002/0074238, hereinafter *Mayer '238*). Applicant has amended claim 18 to incorporate all of the elements and limitations of original claim 19 and has canceled claim 19. Applicant respectfully traverses the rejection.

Regarding original claims 18 and 19, the Examiner asserts that *Dordi et al.*, *Mayer et al.*, *Johnson et al.* teach all of the elements and limitations except a tank with a baffle

assembly. The Examiner asserts that *Mayer '238* teach fluid baffles in the interior of electrolyte recirculation tanks and an Archimedes screw as an inlet to the tank. The Examiner asserts that the combined references teach all of the elements and limitations of original claims 18 and 19, now amended claim 18. Applicant respectfully submits that the Examiner errs in this assertion.

Dordi et al. teach an electrolyte solution replenishing system for providing electrolyte processing fluid to electroplating process cells. The system includes source tanks that contain chemicals needed for composing the electrolyte solution. The source tanks are connected to a main supply line to feed the chemicals into a main electrolyte solution tank. The main electrolyte solution tank feeds into a valve that controls the flow into the process cells. *Dordi et al.* do not teach a catholyte tank with a fluid baffle assembly.

Mayer et al. teach an electroplating system with a process cell having an anolyte compartment and a catholyte compartment. An anolyte tank feeds the anolyte compartment, and a catholyte tank feeds the catholyte compartment. *Mayer et al.* do not teach a catholyte tank with a fluid baffle system.

Johnson et al. teach a cell washing and fluid supply system that may be used to provide fluid from multiple source lines to multiple destinations. The fluid supply system includes a single line (36), at a source end (56) of the tubing set (54) that may be adapted for multiple source containers through the use of an adapter set (60). The solution from the source containers is mixed in the spiked coupler (48). The solution is then divided into two tubes twice, resulting in four tubes of the solution entering the pump frame (30). The pump frame pumps already mixed solution from four inputs to four outputs without further mixing of the solution. Four manual clamps (52) are provided to control the output to four spikes (48) at the destination end (58) of the tubing set (54). Paragraphs [0110] – [0112]; Figure 19A. *Johnson et al.* do not teach a catholyte tank with a fluid baffle system.

Mayer '238 teaches that problems were known in the art of electrochemical processing of semiconductor wafers with regard to bubble formation in electrolyte

solutions. *Mayer '238* incorporated by reference in its entirety U.S. Application No. 09/872,340, which teaches introducing an electrolyte into a holding tank having a vertical baffle. The electrolyte is introduced by way of an Archimedes screw. *Mayer '238* does not teach a fluid bubble baffle assembly positioned inside a catholyte solution tank, wherein the fluid bubble baffle assembly comprises a plurality of upstanding walls that cooperatively form isolated fluid chambers therebetween and a plurality of angled baffle walls positioned in a fluid path of each of the isolated chambers.

Therefore, *Dordi et al.*, *Mayer et al.*, *Johnson et al.*, and *Mayer '238*, alone or in combination, do not teach, show, or suggest a plating solution mixing and delivery system for a multi-chemistry electrochemical plating system comprising a plating solution mixing assembly positioned onboard the multi-chemistry electrochemical plating system, at least one catholyte solution tank and at least one anolyte solution tank, each of the anolyte solution tank and the catholyte solution tank being in fluid communication with the plating solution mixing assembly, a fluid bubble baffle assembly positioned inside the catholyte solution tank, wherein the fluid bubble baffle assembly comprises a plurality of upstanding walls that cooperatively form isolated fluid chambers therebetween, the plurality of upstanding walls having a plurality of fluid pass throughs positioned at a lower base of the upstanding walls, the positioning of the fluid pass throughs being configured to generate a serial fluid path through all of the isolated fluid chambers, and a plurality of angled baffle walls positioned in a fluid path of each of the isolated chambers, and a supply line purge valve positioned adjacent each of the catholyte solution tank and the anolyte solution tank in fluid communication with fluid supply return line for the respective tanks, the supply line purge valve being configured to drain fluid from the supply return line after a fluid solution has been delivered to the tank as recited in amended claim 18 and claims 20-21 dependent thereon. Applicant respectfully requests withdrawal of the rejection.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the office action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this Office Action.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,

By_____

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Attachments